Format No. CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

Date: 04/02/2021

| | | |
|---|---|---|
| Lab ID | : | CP-2021-03-23-39 |
| Customer | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Address | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Project Name | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| Agency | : | Sri. Murulidhara. C R, No:63, 5th Cross, Sathyanarayana Layout, J C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| Customer's Reference | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| Source of Sample | : | Sample supplied by Agency |
| Sample Condition | : | Satisfactory |
| Date of Receipt | : | 30-01-21 |
| Customer ID | : | Culvert Bottom Slab Concrete |
| Sample Type /Size | : | 150X150X150 mm |
| Sample grade/Age | : | M20 / 7 Days Compressive Strength |
| Reference to BIS codes | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| Date of test | : | 04/02/2021 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Culvert Bottom Slab Concrete | M20 | 28/01/2021 | 04/02/2021 | 149.78 X 150.01 X 151.60 | 22468 | 8.208 | 412.1 | 18.3 | 18.5 |
| 2 | Culvert Bottom Slab Concrete | M20 | 28/01/2021 | 04/02/2021 | 149.75 X 151.95 X 150.82 | 22754 | 8.340 | 414.9 | 18.2 | |
| 3 | Culvert Bottom Slab Concrete | M20 | 28/01/2021 | 04/02/2021 | 152.00 X 149.38 X 149.60 | 22705 | 8.607 | 429.9 | 18.9 | |

* The results obtained are satisfactory as per standard requirements.

Note:

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# TEST REPORT OF CEMENT CONCRETE CUBES

Date: 25/02/2021

| | | |
|---|---|---|
| Lab ID | : | CP-2021-03-23-39 |
| Customer | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Address | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Project Name | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| Agency | : | Sri. Murulidhara. C.R, No:63, 5th Cross, Sathyanarayana Layout, J.C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| Customer's Reference | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| Source of Sample | : | Sample supplied by Agency |
| Sample Condition | : | Satisfactory |
| Date of Receipt | : | 30-01-21 |
| Customer ID | : | Culvert Bottom Slab Concrete |
| Sample Type /Size | : | 150X150X150 mm |
| Sample grade/Age | : | M20 / 28 Days Compressive Strength |
| Reference to BIS codes | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| Date of test | : | 25/02/2021 |

| SL No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Culvert Bottom Slab Concrete | M20 | 28/01/2021 | 25/02/2021 | 149.56 X 151.24 X 149.88 | 22619 | 8.807 | 542.1 | 24.0 | 23.2 |
| 2 | Culvert Bottom Slab Concrete | M20 | 28/01/2021 | 25/02/2021 | 149.51 X 151.52 X 151.58 | 22653 | 8.656 | 514.5 | 22.7 | |
| 3 | Culvert Bottom Slab Concrete | M20 | 28/01/2021 | 25/02/2021 | 150.59 X 150.20 X 150.82 | 22619 | 8.917 | 520.7 | 23.0 | |

* The results obtained are satisfactory as per standard requirements.

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# TEST REPORT OF CEMENT CONCRETE CUBES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-03-23-39** **Date: 08/02/2021** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| **Agency** | : | Sri. Murulidhara. C R, No:63, 5th Cross, Sathyanarayana Layout, J C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 03-02-21 |
| **Customer ID** | : | Culvert Side Wall Concrete |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 08/02/2021 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Culvert Side Wall Concrete | M20 | 01/02/2021 | 08/02/2021 | 149.47 X 150.68 X 149.11 | 22523 | 8.208 | 416.8 | 18.5 | 18.8 |
| 2 | Culvert Side Wall Concrete | M20 | 01/02/2021 | 08/02/2021 | 149.35 X 151.13 X 150.67 | 22571 | 8.340 | 425.4 | 18.8 | |
| 3 | Culvert Side Wall Concrete | M20 | 01/02/2021 | 08/02/2021 | 151.30 X 150.27 X 151.59 | 22737 | 8.607 | 430.3 | 18.9 | |

* The results obtained are satisfactory as per standard requirements.

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# TEST REPORT OF CEMENT CONCRETE CUBES

Date: 15/02/2021

| | | |
|---|---|---|
| Lab ID | : | CP-2021-03-23-39 |
| Customer | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Address | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Project Name | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| Agency | : | Sri. Murulidhara. C.R, No:63, 5th Cross, Sathyanarayana Layout, J C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| Customer's Reference | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| Source of Sample | : | Sample supplied by Agency |
| Sample Condition | : | Satisfactory |
| Date of Receipt | : | 10-02-21 |
| Customer ID | : | Cement Concrete Pavement |
| Sample Type /Size | : | 150X150X150 mm |
| Sample grade/Age | : | M30 / 7 Days Compressive Strength |
| Reference to BIS codes | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| Date of test | : | 15/02/2021 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Cement Concrete Pavement | M30 | 08/02/2021 | 15/02/2021 | 151.10 X 151.41 X 149.30 | 22879 | 8.428 | 573.8 | 25.1 | 25.5 |
| 2 | Cement Concrete Pavement | M30 | 08/02/2021 | 15/02/2021 | 151.12 X 150.11 X 150.73 | 22685 | 8.981 | 604.7 | 26.7 | |
| 3 | Cement Concrete Pavement | M30 | 08/02/2021 | 15/02/2021 | 151.52 X 150.45 X 150.59 | 22796 | 8.437 | 567.5 | 24.9 | |

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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | CP-2021-03-23-39 **Date: 15-01-21** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| **Agency** | : | Sri. Murulidhara. C R, No:63, 5th Cross, Sathyanarayana Layout, J C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 13-01-21 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 (Part 1,2 3,4,5, 6,11):1988<br>IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4<br>IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5<br>IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5<br>IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6 |
| **Date of test** | : | 13-01-21 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

| SLNo. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | Fineness by dry sieving (%) | 2.46 | – |
| 2 | Finess by Air permeablity method ($m^2$/kg,Min) | 255.8 | 225$m^2$/kg, Min |
| 3 | Density (gm/cc) | 3.12 | – |
| 4 | Standard Consistency (%) | 28.5% | Not specified |
| 5 | Initial Setting time | 175 minutes | Not less than 30 minutes |
| 6 | Final Setting time | 280 minutes | Not more than 600 minutes |
| 7 | Soundness (Le Chatelier's Method) | 1mm | Not more than 10 mm |

* The results obtained are satisfactory as per standard requirements.

**Note:**

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# TEST REPORT OF FINE AGGREGATE

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-03-23-39** **Date: 15-01-21** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| **Agency** | : | Sri. Murulidhara. C.R, No:63, 5th Cross, Sathyanarayana Layout, J.C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 13-01-21 |
| **Sample Type** | : | Fine Aggregate |
| **Reference to BIS codes** | : | IS 383 : 2016 (Specification for Coarse and fine Aggregates)<br>IS: 2386 :1963(Part - 1, 3) RA2012<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption |
| **Date of test** | : | 13-01-21 |
| **Total weight taken** | : | 1000 grams |

| Sl.no | Sieve Size | Weight Retained (gms) | Cumulative Weight Retained (gms) | % Cumulative Weight Retained | % Passing | Requirement as per IS 383:2016 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Grading Zone I | Grading Zone II | Grading Zone III | Grading Zone IV |
| 1 | 10 mm | 0 | 0 | 0.0 | 100.0 | 100 | 100 | 100 | 100 |
| 2 | 4.75 mm | 27 | 27 | 2.7 | 97.3 | 90-100 | 90-100 | 90-100 | 95-100 |
| 3 | 2.36 mm | 55 | 82 | 8.2 | 91.8 | 60-95 | 75-100 | 85-100 | 95-100 |
| 4 | 1.18 mm | 239 | 321 | 32.1 | 67.9 | 30-70 | 55-90 | 75-100 | 90-100 |
| 5 | 600 micron | 205 | 526 | 52.6 | 47.4 | 15-34 | 35-59 | 60-79 | 80-100 |
| 6 | 300 micron | 203 | 729 | 72.9 | 27.1 | 5-20 | 8-30 | 12-40 | 15-50 |
| 7 | 150 micron | 191 | 920 | 92.0 | 8.0 | 0-10 | 0-10 | 0-10 | 0-15 |
| 8 | Pan | 80 | 1000 | 100.0 | 0.0 | --- | --- | --- | --- |

**Result :The tested Sample Conforms to Grading Zone II**

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## TEST RESULTS OF STEEL

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-03-23-39** **Date: 15-01-21** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| **Agency** | : | Sri. Murulidhara. C.R, No:63, 5th Cross, Sathyanarayana Layout, J.C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 13-01-21 |
| **Sample Type** | : | Sunvik |
| **Reference to BIS codes** | : | IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012. |
| **Date of test** | : | 13-01-21 |

| SLNo | Identification of sample | Grade of the sample | Diameter of the steel bar | Weight of the sample | Yield stress | Tensile strength | Elongation | Bend test | Rebend test |
|---|---|---|---|---|---|---|---|---|---|
| | | | (mm) | (kg/m) | (N/mm2) | (N/mm2) | (%) | | |
| 1 | Sunvik | Fe500 | 8 | 0.391 | 512 | 652 | 20.0% | Satisfactory | Satisfactory |
| 2 | Sunvik | Fe500 | 10 | 0.616 | 528 | 672 | 20.0% | Satisfactory | Satisfactory |
| 3 | Sunvik | Fe500 | 12 | 0.888 | 544 | 668 | 20.0% | Satisfactory | Satisfactory |

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# TEST REPORT OF PRECAST COVER SLAB

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-03-23-39** **Date: 01-02-21** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| **Agency** | : | Sri. Murulidhara. C.R, No:63, 5th Cross, Sathyanarayana Layout, J.C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 27-01-21 |
| **Sample Type /Size** | : | Precast Cover Slab (250mm) |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete |
| **Date of test** | : | 27/01/2021 |

| Sl. No. | Identification Mark | Diameter of the core | Height of the core | Weight of the core | Area | Failure Load | Core Compressive strength | Corrected Cylinder Compressive strength | Equivalent Cube Compressive strength |
|---|---|---|---|---|---|---|---|---|---|
| | | (mm) | (mm) | (kg) | (Sq.mm) | (KN) | ($N/mm^2$) | ($N/mm^2$) | ($N/mm^2$) |
| 1 | Cover Slab-1 | 200.51 | 250.48 | 3.116 | 31570 | 230.9 | 7.3 | 6.8 | 8.5 |
| 2 | Cover Slab-2 | 200.49 | 250.52 | 3.122 | 31564 | 232.3 | 7.4 | 6.8 | 8.6 |
| 3 | Cover Slab-3 | 200.50 | 250.51 | 3.118 | 31567 | 231.5 | 7.3 | 6.8 | 8.5 |

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# TEST REPORT OF CEMENT CONCRETE CUBES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-03-23-39** **Date: 27/01/2021** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| **Agency** | : | Sri. Murulidhara. C.R, No:63, 5th Cross, Sathyanarayana Layout, J.C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 22-01-21 |
| **Customer ID** | : | Drain Bottom Slab Concrete |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 27/01/2021 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Drain Bottom Slab Concrete | M20 | 20/01/2021 | 27/01/2021 | 150.02 X 150.09 X 151.31 | 22517 | 8.208 | 424.4 | 18.8 | 18.6 |
| 2 | Drain Bottom Slab Concrete | M20 | 20/01/2021 | 27/01/2021 | 151.99 X 150.92 X 150.45 | 22939 | 8.340 | 430.2 | 18.8 | |
| 3 | Drain Bottom Slab Concrete | M20 | 20/01/2021 | 27/01/2021 | 151.22 X 149.21 X 150.84 | 22564 | 8.607 | 408.4 | 18.1 | |

* The results obtained are satisfactory as per standard requirements.

Note:
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ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-106

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Authorized Signatory
Quality Manager


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# TEST REPORT OF CEMENT CONCRETE CUBES

Date: 28/01/2021

| | | |
|---|---|---|
| Lab ID | : | CP-2021-03-23-39 |
| Customer | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Address | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| Project Name | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| Agency | : | Sri. Murulidhara. C.R, No:63, 5th Cross, Sathyanarayana Layout, J.C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| Customer's Reference | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| Source of Sample | : | Sample supplied by Agency |
| Sample Condition | : | Satisfactory |
| Date of Receipt | : | 23-01-21 |
| Customer ID | : | Drain Bottom Slab Concrete |
| Sample Type /Size | : | 150X150X150 mm |
| Sample grade/Age | : | M20 / 7 Days Compressive Strength |
| Reference to BIS codes | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| Date of test | : | 28/01/2021 |

| SL No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Drain Bottom Slab Concrete | M20 | 21/01/2021 | 28/01/2021 | 151.08 X 149.23 X 151.57 | 22546 | 8.208 | 410.3 | 18.2 | 18.7 |
| 2 | Drain Bottom Slab Concrete | M20 | 21/01/2021 | 28/01/2021 | 149.94 X 151.59 X 150.72 | 22728 | 8.340 | 430.3 | 18.9 | |
| 3 | Drain Bottom Slab Concrete | M20 | 21/01/2021 | 28/01/2021 | 151.95 X 150.35 X 150.31 | 22847 | 8.607 | 430.0 | 18.8 | |

* The results obtained are satisfactory as per standard requirements.

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ಯಲಹಂಕ ಉಪನಗರ ಉಪವಿಭಾಗ,
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# TEST REPORT OF CEMENT CONCRETE CUBES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-03-23-39** **Date: 18/02/2021** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| **Agency** | : | Sri. Murulidhara. C.R, No:63, 5th Cross, Sathyanarayana Layout, J.C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 23-01-21 |
| **Customer ID** | : | Drain Bottom Slab Concrete |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 28 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 18/02/2021 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Drain Bottom Slab Concrete | M20 | 21/01/2021 | 18/02/2021 | 151.27 X 149.34 X 150.11 | 22591 | 8.807 | 530.0 | 23.5 | 23.2 |
| 2 | Drain Bottom Slab Concrete | M20 | 21/01/2021 | 18/02/2021 | 150.67 X 149.11 X 149.40 | 22467 | 8.656 | 509.0 | 22.7 | |
| 3 | Drain Bottom Slab Concrete | M20 | 21/01/2021 | 18/02/2021 | 149.68 X 151.46 X 149.96 | 22672 | 8.917 | 534.2 | 23.6 | |

* The results obtained are satisfactory as per standard requirements.

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Authorized Signatory
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# TEST REPORT OF CEMENT CONCRETE CUBES

Date: 30/01/2021

| | | |
|---|---|---|
| **Lab ID** | : | CP-2021-03-23-39 |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadana[illegible] and Mathru Layout in Ward No:04" |
| **Agency** | : | Sri. Murulidhara. C.R, No:63, 5th Cross, Sathyanarayana Layout, J.C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-5/W.O/210/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 25-01-21 |
| **Customer ID** | : | Drain Side Wall Concrete |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 30/01/2021 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Drain Side Wall Concrete | M20 | 23/01/2021 | 30/01/2021 | 149.11 X 151.03 X 150.52 | 22520 | 8.208 | 426.5 | 18.9 | 18.5 |
| 2 | Drain Side Wall Concrete | M20 | 23/01/2021 | 30/01/2021 | 150.95 X 149.00 X 150.75 | 22492 | 8.340 | 405.2 | 18.0 | |
| 3 | Drain Side Wall Concrete | M20 | 23/01/2021 | 30/01/2021 | 151.32 X 150.05 X 149.77 | 22707 | 8.607 | 423.6 | 18.7 | |

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Authorized Signatory
Quality Manager

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# TEST REPORT OF CEMENT CONCRETE CUBES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-03-23-39** **Date: 30/01/2021** |
| **Customer** | : | Assistant Executive Engineer, Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Address** | : | Yelahanka Satellite Town Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04" |
| **Agency** | : | Sri. Murulidhara. C R, No:63, 5th Cross, Sathyanarayana Layout, J C Nagara, Kurubarahalli, Mahalakshmipuram Layout, Bangalore-560086 |
| **Customer's Reference** | : | BBMP/EE/YNK.D/EPMT-5/W O/210/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 25-01-21 |
| **Customer ID** | : | Drain Side Wall Concrete |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 30/01/2021 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Drain Side Wall Concrete | M20 | 23/01/2021 | 30/01/2021 | 150.83 X 151.67 X 151.57 | 22877 | 8.208 | 426.8 | 18.7 | 18.3 |
| 2 | Drain Side Wall Concrete | M20 | 23/01/2021 | 30/01/2021 | 149.73 X 149.51 X 149.42 | 22386 | 8.340 | 410.0 | 18.3 | |
| 3 | Drain Side Wall Concrete | M20 | 23/01/2021 | 30/01/2021 | 151.47 X 150.00 X 151.52 | 22720 | 8.607 | 409.6 | 18.0 | |

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## QC ABSTRACT

**NAME OF WORK:** "Improvements to Roads and Drains at Main and Cross Roads of Sharadanaga and Mathru Layout in Ward No:04"

| SL NO | Item Of Work | Name of Test | Frequency of Test/Quantity | Executed Quantity | Number of Tests Required | Number of Tests Conducted |
|---|---|---|---|---|---|---|
| | | **Materials** | | | | |
| 1 | Cement | Fineness by dry sieving | One Test | | 1 | 1 |
| | | Finess by Air permeablity method | One Test | | 1 | 1 |
| | | Density | One Test | | 1 | 1 |
| | | Standard Consistency | One Test | | 1 | 1 |
| | | Initial Setting time | One Test | | 1 | 1 |
| | | Final Setting time | One Test | | 1 | 1 |
| | | Soundness (Le Chatelier's Method) | One Test | | 1 | 1 |
| | | Compressive Strength | One Test | | 1 | 1 |
| 2 | Coarse aggregate(40 mm down size) | SIEVE ANALYSIS | One Test | | 1 | 1 |
| | | Flakiness Index | One Test | | 1 | 1 |
| | | Elongation Index | One Test | | 1 | 1 |
| | | Specific Gravity | One Test | | 1 | 1 |
| | | Bulk Density(Loose) | One Test | | 1 | 1 |
| | | Bulk Density(Compacted) | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| 3 | Coarse aggregate(20 mm down size) | SIEVE ANALYSIS | One Test | | 1 | 1 |
| | | Flakiness Index | One Test | | 1 | 1 |
| | | Elongation Index | One Test | | 1 | 1 |
| | | Specific Gravity | One Test | | 1 | 1 |
| | | Bulk Density(Loose) | One Test | | 1 | 1 |
| | | Bulk Density(Compacted) | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| | | Aggregate crushing Value | One Test | | 1 | 1 |
| | | Aggregate Impact Value | One Test | | 1 | 1 |
| 4 | Fine aggregate | SIEVE ANALYSIS | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| | | Specific Gravity | One Test | | 1 | 1 |
| | | Material finer than 75 micron | One Test | | 1 | 1 |
| 5 | Steel | Bend test | One Test | | 1 | 1 |
| | | Tensile Test | One Test | | 1 | 1 |
| | | Yield Test | One Test | | 1 | 1 |
| | | ReBend test | One Test | | 1 | 1 |
| 6 | Precast (100mm) | Core Compressive Strength | One Test | | 1 | 1 |
| | | Corrected Cylinder Compressive Strength | One Test | | 1 | 1 |
| | | Equivalent Cube Compressive Strength | One Test | | 1 | 1 |
| 7 | Precast (250mm) | Core Compressive Strength | One Test | | 1 | 1 |
| | | Corrected Cylinder Compressive Strength | One Test | | 1 | 1 |
| | | Equivalent Cube Compressive Strength | One Test | | 1 | 1 |
| 8 | RCC(M20) | Compressive Strength(7days and 28days) | 10 set /31-100 cum | 330.98 | 20 | 20 |
| 9 | Cement Concrete Pavemet (M30) | Compressive Strength(7days and 28days) | 6 set /100-150 cum | 127.5 | 12 | 12 |

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